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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/521,275	03/08/2000	Thomas Hung Tran	RO9-99-187	1481

7590 03/25/2004

ROBERT R. WILLIAMS, PATENT AGENT
IBM CORPORATION
DEPARTMENT 917
3605 HIGHWAY 52 NORTH
ROCHESTER, MN 55901-7829

EXAMINER	
IQBAL, NADEEM	
ART UNIT	**PAPER NUMBER**
2114	6

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/521,275	THOMAS HUNG TRAN	
	Examiner	Art Unit	
	Nadeem Iqbal	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,10-12,21-23,28 and 29* is/are rejected.

7)☒ Claim(s) *3-9,13-20 and 24-27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2,3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 10-12 & 21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Marsland, (U.S. Patent number 6047124).

4. As per claims 1 & 12, Marsland teaches (col. 2, lines 18-20) a method and system for tracing device drivers using a computer. A memory is interconnected with a processor in the computer and configured into a user memory space and a kernel memory space and an application process executes on the processor within the user memory space. He thus teaches limitations pertains to a method of testing a device driver comprising allocating a data space for executing a device driver, and executing the device driver as an application on top of the operating system. He also teaches (col. 2, lines 23-25) a tracing device driver executes on the

processor within the kernel memory space and traces the interactions occurring between the traced device driver and the application process and the operating system kernel. He thus teaches limitations pertains to monitoring to detect whether a request made by the device driver specifies a target address within the data space. He does not explicitly discloses to detect that the target address for the request being made outside of the data space, trapping on that address and execute a data exception handler emulating a target device. He teaches (col. 4, lines 53-55) that device drivers include code for interrupt handling. He also teaches (col. 6, lines 22-25) that a user process generates a page fault by attempting to access device memory, and that page fault is resolved by the kernel by calling the driver entry point to obtain the physical address of the driver memory. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to realize that Marsland also detects for the target address being outside of the data space, traps and executes a data exception handler, since he teaches that a user process generates a page fault, therefore would clearly detects for the stated target address, and also teaches to resolve the page fault by calling the driver entry point, therefore would execute a data exception handler.

5. As per claim 2, He teaches (col. 6, lines 22-25) that a user process generates a page fault by attempting to access device memory, and that page fault is resolved by the kernel by calling the driver entry point to obtain the physical address of the driver memory. He thus clearly sets up the data exception handler.

Allowable Subject Matter

6. Claims 3-9, 13-20, 24-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. As per claims 10, 11, & 21, He teaches (col. 6, lines 22-25) that a user process generates a page fault by attempting to access device memory, and that page fault is resolved by the kernel by calling the driver entry point to obtain the physical address of the driver memory. He thus teaches data exception handler and also teaches as stated per claim 1 above a tracing device driver that executes on the processor within the kernel memory space and traces the interactions occurring between the traced device driver and the application process and the operating system kernel. He thus teaches limitations pertains to using the software emulator to test the application for the device driver.

8. Claims 22, 23, 28 & 29, are rejected under 35 U.S.C. 103(a) as being unpatentable over Marsland, (U.S. Patent number 6047124).

9. As per claim 22, Marsland substantially teaches the claimed invention as disclosed related to claim 1 above. He also teaches (col. 2, lines 18-20) a memory interconnected with a processor in the computer and configured into a user memory space and a kernel memory space and an application process executes on the processor within the user memory space. He thus teaches limitations pertains to a means for allocating a data space for executing a device driver, and executing the device driver as an application on top of the operating system. He also teaches (col. 2, lines 23-25) a tracing device driver executes on the processor within the kernel memory space and traces the interactions occurring between the traced device driver and the application

process and the operating system kernel. He thus teaches means for monitoring to detect whether a request made by the device driver specifies a target address within the data space. He does not explicitly discloses to detect that the target address for the request being made outside of the data space, trapping on that address and execute a data exception handler emulating a target device. He teaches (col. 4, lines 53-55) that device drivers include code for interrupt handling. He also teaches (col. 6, lines 22-25) that a user process generates a page fault by attempting to access device memory, and that page fault is resolved by the kernel by calling the driver entry point to obtain the physical address of the driver memory. It would have been obvious to a person of ordinary skill in the art to realize that Marsland also detects for the target address being outside of the data space, traps and executes a data exception handler, since he teaches that a user process generates a page fault, therefore would clearly detects for the stated target address, and also teaches to resolve the page fault by calling the driver entry point, therefore would execute a data exception handler.

10. As per claim 23, He teaches (col. 6, lines 22-25) that a user process generates a page fault by attempting to access device memory, and that page fault is resolved by the kernel by calling the driver entry point to obtain the physical address of the driver memory. He thus clearly sets up the data exception handler.

11. As per claims 28 & 29, He teaches (col. 6, lines 22-25) that a user process generates a page fault by attempting to access device memory, and that page fault is resolved by the kernel by calling the driver entry point to obtain the physical address of the driver memory. He thus teaches data exception handler and also teaches as stated per claim 1 above a tracing device driver that executes on the processor within the kernel memory space and traces the interactions

occurring between the traced device driver and the application process and the operating system kernel. He thus teaches limitations pertains to using the software emulator to test the application for the device driver.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadeem Iqbal whose telephone number is (703)-308-5228. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W Beausoliel can be reached on (703)-305-9713. The fax phone number for the organization where this application or proceeding is assigned is (703)-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-3900.

Nadeem Iqbal
Primary Examiner
Art Unit 2114